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Application No. 08/514,699

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

1. (Currently Amended) A process comprising:

dispersing a first liquid developer concentrate comprising a resin, a colorant, and a liquid developer reconstitution compound, in a carrier liquid, into additional carrier liquid to form a second liquid developer;

depositing the second liquid developer onto a liquid receiver member to form a developer cake;

developing an image with the developer cake;

reclaiming undeveloped developer cake from the cake bearing liquid receiver member; [(and)]

redispersing the reclaimed undeveloped developer cake in the second developer liquid and wherein

the reclaimed undeveloped developer cake is separated from the second liquid developer until the solids content of the second liquid developer drops below from about 6 to about 10 weight percent.

2. Cancelled.

3. (Previously Presented) A process in accordance with claim 1, further comprising wherein the developer cake on the liquid receiver member is charged by a corona charger prior to developing the image.

4. (Original) A process in accordance with claim 1, wherein the second liquid developer is dielectric with a conductivity of from about 0.01 to about 5 pS/cm.

5. (Previously Presented) A process in accordance with claim 1, further comprising continuously measuring the solids content or solids concentration of the second liquid developer in a developer sump.

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6. Cancelled.

7. (Previously Presented) A process in accordance with claim 1, further comprising transferring the developed image to a receiver substrate.

8. Cancelled.

9. (Original) A process in accordance with claim 1, wherein the reclaimed developer cake is combined directly with the second liquid developer.

10. Cancelled.

11. (Withdrawn) A liquid developer composition comprising: a concentrate of a mixture of a resin, a colorant, a carrier liquid, an optional charge acceptance agent, and a liquid developer reconstitution compound.

12. (Withdrawn) A composition in accordance with claim 11, wherein the liquid developer reconstitution compound is a polydimethylsiloxane containing copolymer with a weight average molecular weight of from about 1,000 to about 1,000,000.

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13. (Withdrawn) A composition in accordance with claim 11, wherein the liquid developer reconstitution compound is selected from the group consisting of:

i) block copolymers of the formula poly(A-b-B), with a first lipophilic A block of poly(dimethylsiloxane), with a weight average molecular weight of from about 1,000 to about 1,000,000, and with a second lipophobic B block comprised of monomers of alkyleneoxides, alkyl acrylates, alkyl alkacrylates, with a weight average molecular weight of from about 100 to about 100,000, and mixtures thereof;

ii) grafted copolymers of the formula poly(A-g-B), with a continuous A polymer backbone with a weight average molecular weight of from about 1,000 to about 1,000,000 comprised of monomers selected from the group consisting of alkyleneoxides, alkyl acrylates, alkyl alkacrylates, and mixtures thereof, and grafted B polymer segments comprised of poly(dialkylsiloxane) segments appended to the A backbone wherein each grafted B segment has a weight average molecular weight of from about 100 to about 100,000, and wherein the grafting(g) is present in an amount of from about 10 to about 35 weight percent based on the total weight of the polymer;

iii) random copolymers with at least one hydrophilic segment which is attracted to or attached to the surface of the resin particles and at least one hydrophobic segment compatible with the liquid carrier;

iv) random or blocked copolymers of the formula poly(A-B) of alkylene-vinyl acetate, where A is from 1 to about 1,000 mers of alkylene, and B is from 1 to about 1,000 mers of vinyl acetate;

v) nonionic surfactants with an HLB from about 8 to about 24; and mixtures thereof.

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14. (Withdrawn) A composition in accordance with claim 11, wherein the liquid developer reconstitution compound is selected from functionalized polysiloxanes with a weight average molecular weight of from about 1,000 to about 1,000,000, selected from the group consisting of:

a) amine functionalized poly(dimethylsiloxane) polymers of the formula X-(A)-X where A is a polysiloxane and where X can be hydrogen, and one or both X groups can be an -NR₃ where R is independently selected from hydrogen, alkyl with from about 1 to about 18 carbon atoms, and aryl with from about 5 to about 18 carbon atoms, or amine pendant poly(dimethylsiloxane) polymers of the form (A)-Y-(A), where Y is a silicon atom with pendant alkylamine groups -RX, where R is an alkyl chain of length from 1 to about 10 carbon atoms and X is as above;

b) hydroxy functionalized poly(dimethylsiloxane) polymers of the formula X-(A)-X where A is a polysiloxane, and where X can be hydrogen, and one or both -X can be an hydroxyl group (-OH) or hydroxy pendant poly(dimethylsiloxane) polymers of the formula (A)-Y-(A), where Y is a silicon atom with a pendant hydroxyl group (-OH) ;

c) zwitterionic poly(dimethylsiloxane) polymers of the formula X-(A)-Y where A is a polysiloxane, where X can be a cationic group, and -Y can be an anionic group; and

d) oligomeric polyalkylene oxide terminated poly(dimethylsiloxane) polymers of the formula X-(A)-X where A is a polysiloxane, where X is hydrogen, and one or both X are a polyalkylene oxide segment of the formula HO-(-R-O)_m- where R is a hydrocarbon with from 1 to about 18 carbon atoms, and m is from 1 to about 20.

15. (Withdrawn) A composition in accordance with claim 11, wherein the liquid developer reconstitution compound is present in an amount of from about 0.1 to about 10 weight percent of the total solids content of the liquid developer as a concentrate composition.

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16. (Withdrawn) A composition in accordance with claim 11, wherein the liquid developer has a solids content of from about 5 to about 50 weight percent as a concentrate composition.

17. (Withdrawn) A composition in accordance with claim 11, wherein the liquid developer has a solids content of from about 5 to about 15 weight percent as a working developer composition.

18. (Withdrawn) A composition in accordance with claim 11, wherein the liquid developer reconstitution compound provides: a stabilized and readily dispersible developer concentrate; stabilized second liquid developer particles; a stabilized developed cake; enhanced developer release from intermediate members or image members; and rapid redispersion of reclaimed developer cake particles in carrier liquids.

19. (Withdrawn) A printing machine comprising:
an image receiver, a liquid developer housing, and a first liquid developer composition of claim 11; wherein the housing is adapted to reclaim undeveloped developer cake from the undeveloped cake bearing liquid receiver member, and adapted to redisperse the reclaimed undeveloped developer cake into the first developer liquid.

20. (Withdrawn) A printing machine in accordance with claim 19, wherein the developer housing is adapted to redisperse the reclaimed undeveloped developer cake into a second developer liquid.

21. (New) A liquid developer composition comprising: a concentrate of a mixture of a resin, a colorant, a carrier liquid, an optional charge acceptance agent, and a liquid developer reconstitution compound.

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22. (New) A composition in accordance with claim 21, wherein the liquid developer reconstitution compound is a polydimethylsiloxane containing copolymer with a weight average molecular weight of from about 1,000 to about 1,000,000.

23. (New) A composition in accordance with claim 21, wherein the liquid developer reconstitution compound is selected from the group consisting of:

i) block copolymers of the formula poly(A-b-B), with a first lipophilic A block of poly(dimethylsiloxane), with a weight average molecular weight of from about 1,000 to about 1,000,000, and with a second lipophobic B block comprised of monomers of alkyleneoxides, alkyl acrylates, alkyl alkacrylates, with a weight average molecular weight of from about 100 to about 100,000, and mixtures thereof;

ii) grafted copolymers of the formula poly(A-g-B), with a continuous A polymer backbone with a weight average molecular weight of from about 1,000 to about 1,000,000 comprised of monomers selected from the group consisting of alkyleneoxides, alkyl acrylates, alkyl alkacrylates, and mixtures thereof, and grafted B polymer segments comprised of poly(dimethylsiloxane) segments appended to the A backbone wherein each grafted B segment has a weight average molecular weight of from about 100 to about 100,000, and wherein the grafting(g) is present in an amount of from about 10 to about 35 weight percent based on the total weight of the polymer;

iii) random copolymers with at least one hydrophilic segment which is attracted to or attached to the surface of the resin particles and at least one hydrophobic segment compatible with the liquid carrier;

iv) random or blocked copolymers of the formula poly(A-B) of alkylene-vinyl acetate, where A is from 1 to about 1,000 mers of alkylene, and B is from 1 to about 1,000 mers of vinyl acetate;

v) nonionic surfactants with an HLB from about 8 to about 24; and mixtures thereof.

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24. (New) A composition in accordance with claim 21, wherein the liquid developer reconstitution compound is selected from functionalized polysiloxanes with a weight average molecular weight of from about 1,000 to about 1,000,000, selected from the group consisting of:

a) amine functionalized poly(dimethylsiloxane) polymers of the formula X-(A)-X where A is a polysiloxane and where X can be hydrogen, and one or both X groups can be an -NR₃ where R is independently selected from hydrogen, alkyl with from about 1 to about 18 carbon atoms, and aryl with from about 5 to about 18 carbon atoms, or amine pendant poly(dimethylsiloxane) polymers of the form (A)-Y-(A), where Y is a silicon atom with pendant alkylamine groups -RX, where R is an alkyl chain of length from 1 to about 10 carbon atoms and X is as above;

b) hydroxy functionalized poly(dimethylsiloxane) polymers of the formula X-(A)-X where A is a polysiloxane, and where X can be hydrogen, and one or both -X can be an hydroxyl group(-OH) or hydroxy pendant poly(dimethylsiloxane) polymers of the formula (A)-Y-(A), where Y is a silicon atom with a pendant hydroxyl group (-OH) ;

c) zwitterionic poly(dimethylsiloxane) polymers of the formula X-(A)-Y where A is a polysiloxane, where X can be a cationic group, and -Y can be an anionic group; and

d) oligomeric polyalkylene oxide terminated poly(dimethylsiloxane) polymers of the formula X-(A)-X where A is a polysiloxane, where X is hydrogen, and one or both X are a polyalkylene oxide segment of the formula HO-(-R-O)_m- where R is a hydrocarbon with from 1 to about 18 carbon atoms, and m is from 1 to about 20.

25. (New) A composition in accordance with claim 21, wherein the liquid developer reconstitution compound is present in an amount of from about 0.1 to about 10 weight percent of the total solids content of the liquid developer as a concentrate composition.

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26. (New) A composition in accordance with claim 21, wherein the liquid developer has a solids content of from about 5 to about 50 weight percent as a concentrate composition.

27. (New) A composition in accordance with claim 21, wherein the liquid developer has a solids content of from about 5 to about 15 weight percent as a working developer composition.

28. (New) A composition in accordance with claim 21, wherein the liquid developer reconstitution compound provides: a stabilized and readily dispersible developer concentrate; stabilized second liquid developer particles; a stabilized developed cake; enhanced developer release from intermediate members or image members; and rapid redispersion of reclaimed developer cake particles in carrier liquids.

29. (New) A printing machine comprising:
an image receiver, a liquid developer housing, and the first liquid developer of claim 21 and wherein the housing is adapted to reclaim undeveloped developer cake from the undeveloped cake bearing liquid receiver member, and adapted to redisperse the reclaimed undeveloped developer cake into the first developer liquid.

30. (New) A printing machine in accordance with claim 29, wherein the developer housing is adapted to redisperse the reclaimed undeveloped developer cake into a second developer liquid.

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